



3-25-05

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Application Number : 10/707,216  
Applicant : Nick Hilliard  
Filed : 11/26/2003  
Title : Universal product code conversion to electronic product code  
Examiner : S. Paik

Mailed: 5/24/2005  
At: Woodstock, Georgia, 30188

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

### Amendment

Sir:

In response to the Office Action mailed 02/24/2005, please amend the above application as follows:

**Specification:** Please replace paragraph [0011] with the following amended paragraph

[0011] APPENDIX A: C-Language Code

```
// UPC to EPC conversion code, based on multiplication, division, and shifting
void UPC2EPC1( __int64 UPC, unsigned char header, unsigned char partition, unsigned char objectType,
unsigned char indicatorDigit, unsigned char* EPC, unsigned char* serialNumber ) {
    unsigned long EPCMgr;
    unsigned long ObjectClass;
    EPC[0] = header; // header indicates 96-bit GTIN
    EPC[1] = objectType << 5; // move objectType into high-order three bits
    EPC[1] |= partition << 2; // move partition type into next three bits
    EPCMgr = (unsigned long)( UPC / 1000000 ); // extract company number / EPC manager number
    // extract object class, discard check digit
    ObjectClass = (unsigned long)(UPC - (__int64)EPCMgr*1000000)/10;
    EPC[2] = (unsigned char)( EPCMgr >> 14 ); // shift and incorporate high bits
    EPC[3] = (unsigned char)( EPCMgr >> 6 ); // shift and incorporate next bits
    EPC[4] = (unsigned char)( EPCMgr << 2 ); // shift and incorporate next bits
    ObjectClass += indicatorDigit*100000;
    EPC[5] = (unsigned char)( ObjectClass >> 10 ); // shift and incorporate high bits
    EPC[6] = (unsigned char)( ObjectClass >> 2 ); // shift and incorporate next bits
    EPC[7] = (unsigned char)( ObjectClass << 6 ); // shift and incorporate last bits
    EPC[7] |= serialNumber[0]; // bits are already aligned
    EPC[8] = serialNumber[1]; // bits are already aligned
    EPC[9] = serialNumber[2]; // bits are already aligned
    EPC[10] = serialNumber[3]; // bits are already aligned
    EPC[11] = serialNumber[4]; // bits are already aligned
}
```

APPENDIX B: C-Language Code

```
// UPC to EPC conversion code, based on multiplication and division
void UPC2EPC2( __int64 UPC, unsigned char header, unsigned char partition, unsigned char objectType,
unsigned char indicatorDigit, unsigned char* EPC, unsigned char* serialNumber ) {
```